

**METHOD AND APPARATUS FOR DETECTING AN END-POINT IN  
CHEMICAL MECHANICAL POLISHING OF METAL LAYERS**

**ABSTRACT**

5           An apparatus, as well as a method, determines an endpoint of chemical mechanical  
polishing a metal layer on a substrate. The method of the apparatus includes bringing a surface  
of a substrate into contact with a polishing pad that has a window; causing relative motion  
between the substrate and the polishing pad; directing a light beam through the window, the  
motion of the polishing pad relative to the substrate causing the light beam to move in a path  
10 across the substrate; detecting light beam reflections from the substrate and a retaining ring;  
generating reflection data associated with the light beam reflections; dividing the reflection data  
into a plurality of radial ranges; and identifying the predetermined pattern from the reflection  
data in the plurality of radial ranges to establish the endpoint.

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